REMARKS/ARGUMENTS

This paper is responsive to the Final Office Action dated March 24, 2004, having a shortened statutory period expiring on June 24, 2004, wherein:

Claims **27-30, 32-36, 38-43, 45-49,** and **51-59** were pending in the application; and

Claims **27-30, 32-36, 38-43, 45-49,** and **51-59** were rejected.

No claims have been amended, canceled, or added by this amendment. Accordingly, claims **27-30, 32-36, 68-43, 45-49,** and **51-59** remain currently pending in the present application.

Formal Matters

In the present Office Action, the Examiner has indicated claims 1-26, 31, 37, 44, and 50 as being "withdrawn from consideration" but still currently pending. Applicants submit that these claims were canceled without prejudice or disclaimer of the subject matter recited therein in the Amendment filed July 18, 2003. Applicants respectfully request therefore that the status of these claims be correctly indicated in all future actions.

Response to Arguments

In the present Office Action, the Examiner has responded to the arguments of Applicants' Request for Reconsideration filed December 31, 2003. Applicants appreciate the Examiner's reconsideration and respectfully traverse the Examiner's response as follows.

In paragraph 3 of the present Office Action, the Examiner disagrees with Applicants' statement that U.S. Pat. No. 6,195,553, issued to Claffery et al. (hereinafter "***Claffery***") fails to teach computer code configured to cause a processor to "identify pairs of said network elements as being in a first set of network element pairs" as claimed by Applicants (Applicants' claim 27) stating that ***Claffery***'s teaching of "a software driven method and apparatus that first determines what communications 'links' are available" in conjunction with the Examiner's definition of a link as, "an entity that defines a topological relationship between two nodes in different subnetworks" renders the claimed identification obvious. More specifically the Examiner states that,

> Every link that is found in the chain for the optimal path has a source node and a destination node, therefore for every link determined there is a corresponding source and destination node. Thus the act of determining which links are available also identifies a pair of network elements. (Final Office Action dated March 24, 2004, page 2, paragraph 3)

Applicants respectfully disagree. Applicants submit that the determination of what links are available, even if coupled with a relationship between each of such links and "two nodes in different subnetworks" does not, inherently or otherwise, teach, show, or suggest the identification of pairs of network elements and further does not teach, show, or suggest the identification of pairs of network elements "as being in a first set of network element pairs" as claimed. Applicants respectfully submit that the Examiner's referenced portion of ***Claffery***, cited as teaching the determination of what links are available, could produce a result such as simply one or more link identifiers (e.g., Link 2 or L2) or such a link identifier coupled with a link status (e.g., "active" or "available") without identifying any nodes associated with such links. Consequently, Applicants submit that the Examiner has not established that ***Claffery*** teaches, shows, or suggests computer code configured to cause a processor to "identify pairs of said network elements as being in a first set of network element pairs" as claimed.

In paragraph 5 of the present Office Action, the Examiner disagrees with Applicants' statement that ***Claffery*** fails to teach or suggest, computer code configured to cause a processor to "measure a measured network performance metric between a first network element and a second network element of each network element pair in said second set of network element pairs" as claimed by Applicants (Applicants' claim 27) stating that,

> It is a well-known practice in the art to measure network performance metrics including, but not limited to, link distance, link quality, cost functions, and whether a link is active or inactive as illustrated in at least the abstract of U.S. Patent No. 6,055, 493. (Final Office Action dated March 24, 2004, page 3, paragraph 5)

Applicants respectfully disagree. Applicant submit that the Examiner has not cited ***Claffery*** as teaching computer code configured to cause a processor to "measure a measured network performance metric between a first network element and a second network element of each network element pair in said second set of network element pairs" in his response to Applicants' arguments, that ***Claffery*** fails to teach, show, or suggest such computer code, and that the Examiner has failed to provide any suggestion or motivation to combine U.S. Pat. No.

6,055, 493, issued to Ries et al. (hereinafter "***Ries***") with the referenced teachings of ***Claffery***. Consequently, Applicants submit that the Examiner's response, without more, fails to establish a *prima facie* case of obviousness under 35 U.S.C. §103.

Rejection of Claims under 35 U.S.C. §103

In the present Office Action, claims 27-30, 32-36, 38-43, 45-49, and 51-59 were rejected under 35 U.S.C. 103(a) as being unpatentable over ***Claffery*** in view of U.S. Pat. No. 6,058,103 issued to Henderson et al. (hereinafter "***Henderson***"). While not conceding that the Examiner's cited reference(s) qualify as prior art, but instead to expedite prosecution, Applicants have chosen to respectfully disagree and traverse the rejection as follows. Applicants reserve the right, for example, in a continuing application, to establish that one or more of the Examiner's cited references do not qualify as prior art as to an invention embodiment previously, currently, or subsequently claimed.

In addition to those arguments previously submitted which Applicants' maintain, Applicants respectfully submit that the cited portions of neither ***Claffery*** nor ***Henderson*** teach, show, or suggest computer code configured to cause a processor to,

> measure a measured network performance metric between a first network element and a second network element of each network element pair in said second set of network element pairs; and
>
> compute a computed network performance metric between a first network element and a second network element of a remaining network element pair in said first set of network element pairs using at least one of said measured network performance metrics...

as claimed by Applicants (Applicants' claim 27), that the Examiner has provided no suggestion or motivation to combine the teachings of ***Claffery*** and ***Henderson*** together or with the teaching of ***Ries***, and that, even if combined, the teachings of the Examiner's cited referenced still fail to teach, show, or suggest the above-indicated elements of Applicants' claim.

With regard to Applicants' claim 27, and the described computer code configured to cause a processor to, "measure a measured network performance metric between a first network element and a second network element of each network element pair in said second set of network element pairs" the Examiner references Column 6, Lines 22-29 of ***Claffery*** which

describes a cost matrix constructed on the basis of the link availability matrix. The cited portion of ***Claffery*** further teaches that,

> The cost matrix is set up in terms of values or link weights. For example, using hop count as the cost factor, a link weight or value of 1.0 is given to indicate "link available" and a link weight or value of infinity is given to indicate "link not available". Various weight scales are utilized on the basis of various parameters such as link distance, link quality, cost functions, link active/inactive or the like. (***Claffery***, Column 6, Lines 23-29)

The cited portion of ***Claffery*** does not teach, show, or suggest however the measurement of any of the described parameters, cost factor(s), or link weight(s) and therefore can not be construed as teaching, showing, or suggesting, computer code configured to cause a processor to, "measure a measured network performance metric" as claimed. ***Henderson*** is not cited as teaching such computer code and, with respect to the Examiner's statement that ***Ries*** shows that, "It is a well-known practice in the art to measure network performance metrics...", Applicants submit that the Examiner has failed to provide a suggestion or motivation to combine the teachings of ***Ries*** and ***Claffery***. Consequently, the present Office Action fails to establish that the cited references, alone or in permissible combination, render Applicants' claim(s) obvious.

Moreover, Applicants submit that the Examiner's cited references fails to teach, show, or suggest computer code configured to cause a processor to, "measure a measured network performance metric between a first network element and a second network element <u>of each network element pair in said second set of network element pairs</u>" as required by Applicants' claim (Applicants' claim 27, emphasis supplied). The cost matrix taught by ***Claffery*** clearly includes link weights or values for only a single origination point/destination point pair (see ***Claffery***, Column 6, Lines 16-21 and ***Claffery***, Fig. 5) Accordingly, the Examiner's cited portion of Claffery cannot be construed as teaching, show, or suggesting the measurement of "a measured network performance metric between a first network element and a second network element <u>of each network element pair in said second set</u>" where the second set includes, "network element <u>pairs</u>" as claimed. The Examiner's cited references (including ***Claffery***) therefore fail to teach, show, or suggest not only measurement generally but measurement as specifically claimed by Applicants.

With regard to Applicants' claim 27, and the described computer code configured to cause a processor to, "compute a computed network performance metric between a first network element and a second network element of a remaining network element pair in said first set of network element pairs using at least one of said measured network performance metrics" the Examiner references Fig. 1, Block 18, and Column 8, Line 43 - Column 9, Line 16 of ***Claffery*** which illustrate the construction of a least cost array and total cost array and describe a least cost array method, respectively.

Applicants respectfully submit that, as clearly shown herein, the Examiner's cited references fail to teach, show, or suggest computer code configured to cause a processor to "measure a measured network performance metric between a first network element and a second network element of each network element pair in said second set of network element pairs" as claimed. Consequently, Applicants submit that ***Claffery*** cannot be construed as teaching, showing, or suggesting computer code configured to cause a processor to, "compute a computed network performance metric between a first network element and a second network element of a remaining network element pair in said first set of network element pairs using at least one of said measured network performance metrics..." as claimed (Applicants' claim 27, emphasis supplied).

Applicants further submit that, as ***Claffery*** teaches the determination of optimal paths between a single origination point/destination point pair at a time rather than an analysis of a network as a whole, ***Claffery*** fails to teach, show, or suggest the use of a "measured network performance metric" measured between network elements of a second set of network elements within a first set of network elements to compute a "a computed network performance metric" between a pair of network elements within the first set of network elements but outside of the intersection of the first set and second set of network elements as required by Applicants' claims. Rather, the teaching of ***Claffery*** requires that a given parameter be determined not only for each originating point/destination point pair, but for each path between such an originating point/destination point pair (see, e.g., Claffery Fig. 2, indicating the performance of multiple loops for the determination of each total cost and least cost array).

With regard to Applicants' claim 27, and the described computer code configured to cause a processor to, "generate a first matrix from said first set of network element pairs, wherein each row in said first matrix corresponds to a corresponding network element pair in said first set of network element pairs, and said first matrix comprises independent rows and non-independent rows" the Examiner acknowledges that ***Claffery*** fails to teach independent rows and non-independent rows and references Figs. 5C and 5D, and Column 14, Lines 9-56 of ***Henderson***. The Examiner further states that, "It would have been obvious to one of ordinary skill in the art at the time the invention was made to have first matrix comprise of [*sic*] independent and non-independent rows, since it has been held in Claffery in column 18 that such a modification would aid in measuring performance metrics between adjacent nodes and computing performance metrics for nodes that have an intervening node."

Applicants respectfully disagree. The Examiner's referenced portion of ***Henderson*** teaches linked topological and topographical views of a network but is not cited as teaching and fails to teach, show, or suggest computer code configured to cause a processor to,

> measure a measured network performance metric between a first network element and a second network element of each network element pair in said second set of network element pairs; and
>
> compute a computed network performance metric between a first network element and a second network element of a remaining network element pair in said first set of network element pairs using at least one of said measured network performance metrics...

as claimed (Applicants' claim 27). Furthermore, Applicants respectfully submit that the portion of ***Claffery*** (Column 18) indicated by the Examiner as providing a suggestion or motivation to combine ***Claffery***'s teaching with that of ***Henderson*** does not exist (Column 12 is the final column of the Examiner's reference). Applicants further submit that, as neither ***Claffery*** nor ***Henderson*** teach, show, or suggest the measurement of a measured network performance metric or the computation of a computed network performance metric as indicated above, no resulting combination of these references would teach, show, or suggest all elements of Applicants' claims or render Applicants' claims obvious even if combined as suggested by the Examiner.

Accordingly, Applicants submit that claim 27 is allowable over the Examiner's cited references alone or in permissible combination. Applicants' claims 40 and 53 each include one or more elements or limitations substantially similar to those described with respect to claim 27. Applicants therefore respectfully submit that the described claims and all claims depending therefrom are allowable for at least those reasons stated for the allowability of that claim.

Applicants further respectfully submit that the cited portions of neither ***Claffery*** nor ***Henderson*** teach, show, or suggest computer code configured to cause a processor to, "compute a number, wherein said number is equal to a rank of said first matrix" as claimed by Applicants (Applicants' claim 32). With regard to Applicants' claim 32, and the above-described limitation the Examiner references Column 4, Lines 31-44 of ***Claffery*** which describes a link availability matrix as including "start times" which are ordered chronologically into a list of Primary Evaluation Times (PETs). Applicants therefore presume that the Examiner has interpreted the term "rank" according to its conventional definition (i.e., relative standing or position or order according to some statistical characteristic). Within the context of Applicants' claim 32 however, the term "rank" is used as a term of art with respect to a matrix, (e.g., indicating the number of nonzero rows, the row space dimension of the matrix, or the number of linearly independent rows or columns).

Consequently, Applicants submit that that the Examiner's cited portion of ***Claffery*** fails to teach, show, or suggest the computation of "a rank of said first matrix" as claimed. Moreover, Applicants respectfully submit that the cited portion of Claffery is indicative at most of the ranking (as conventionally defined) of the elements of the matrix (i.e., the start times) rather than the matrix itself. Accordingly, Applicants submit that claim 32 is allowable over the Examiner's cited references alone or in permissible combination. Applicants' claims 45 and 54 each include one or more elements or limitations substantially similar to those described with respect to claim 32. Applicants therefore respectfully submit that the described claims and all claims depending therefrom are independently allowable for at least those reasons stated for the allowability of that claim.

CONCLUSION

Applicant(s) submit that all claims are now in condition for allowance, and an early notice to that effect is earnestly solicited. Nonetheless, should any issues remain that might be subject to resolution through a telephonic interview, the Examiner is requested to telephone the undersigned.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop AF, Commissioner for Patents, P. O. Box 1450, Alexandria, Virginia, 22313-1450, on 5-24-09.

Attorney for Applicant(s) — Date of Signature: 5-24-09

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